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**Al-Quds University**



**Effectiveness of “WHO Multimodal Intervention” in Improving  
Hand Hygiene Compliance Level among Health Care Workers and  
Food Suppliers at Caritas Baby Hospital**

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Hygiene Compliance Level among Health Care Workers and Food Suppliers  
at Caritas Baby Hospital**

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**Thesis Approval**

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**Declaration**

I clarify that this thesis is the result of my own work research, except where otherwise indicated. It has been submitted for the degree of Master and not for a higher degree to any other university or institution.

.....

Suha Nicola Emaya

Date.....

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## Abstract

**Background:** Health care-associated infections have been linked to higher levels of mortality, longer hospital stays, a higher likelihood of hospital readmission and increased cost. Several studies have illustrated the correlation between increased hand hygiene compliance among healthcare workers and decreased health care-associated infections rate (Al-Tawfig, 2013, Huskins, 2010, Klevens, 2005). However, hand hygiene compliance levels remain poor among health care workers in hospitals. Therefore effective improvement strategies are needed to increase the compliance of hand hygiene levels among health care workers in hospitals.

**Aim:** To evaluate the effectiveness of WHO multimodal intervention in sustaining and increasing compliance level of hand hygiene among health workers and food suppliers.

**Method:** A quantitative, quasi-experimental design conducted at Caritas Baby Hospital. All health care workers who have direct contact with patients and food suppliers in Caritas Baby Hospital were targeted. Data was collected using a hospital infection control hand hygiene check list (annex 1). Data was collected pre and while and post intervention of multimodal intervention, data was analyzed by using the Statistical Package for the Social Sciences (SPSS V.17), by means of descriptive statistics.

**Findings:** 145 health care workers and food supplier participated in the study, response rate was 96%. Participants were nurses 67%, physicians 11%, lab technicians 8%, x-ray technicians 3% and food suppliers 11% (milk kitchen employees), were presented in the study and received education and training programs relating proper hand hygiene. The result showed there is a strong significant association and positive correlation at ( $\alpha \leq 0.5$ ) between WHO multi modal and the compliance to hand hygiene guidelines among health care workers and food suppliers at Caritas Baby Hospital. There is a significant increase in pooled mean hand hygiene compliance from 72.62% at baseline to 95.72% after an average three-month intervention period with improvement across all professional categories. Where the highest level was 99.3% for LAB employees while the lowest level was 85% for Milk Kitchen employees. According to compliance to my five moments part, the highest level was 92% for x-ray technician while the lowest level was 75% for Physicians. Also there are differences in compliance level with hand

hygiene guidelines according to working shift of the health care workers before and after introducing multimodal intervention for all parts of the study ( $P < 0.05$ ). And there are significant differences among HCWs and among all hospital departments in compliance to my five moments, also compliance level in after patient contact was greater than before patient contact.

**Conclusion and Recommendation:** hand hygiene is the cornerstone of infection prevention. Hand hygiene compliance among health care workers and food suppliers was improved positively from 72.62% at baseline to 95.72% post WHO multimodal intervention. The study findings represent powerful support for decision and policy making to enforce implementation of WHO multimodal intervention to improve hand hygiene compliance in Palestinian hospitals.

فعالية التدخلات متعددة الوسائل لمنظمة الصحة العالمية في تحسين معدل امتثال عاملي الرعاية الصحية وموردي السلع الغذائية في نظافة اليدين في مستشفى كارييتاس للأطفال.

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### ملخص الدراسة

**الخلفية:** إنّ العدوى المرتبطة بالرعاية الصحيّة والمنتشرة داخل المستشفى تتسبّب في زيادة عدد الوفيات وطول مدة الاستشفاء، وارتفاع نسبة إعادة إدخال المرضى إلى المستشفيات، وهذا بالإجمال يؤدي إلى ارتفاع تكاليف الرعاية الصحيّة. حيث أظهرت العديد من الدراسات وجود ارتباط بين ارتفاع معدّل الالتزام بنظافة اليدين بين العاملين في المستشفيات وانخفاض معدلا العدوى المرتبطة بالرعاية الصحيّة والمنتشرة داخل المستشفى. وعلى الرغم من ذلك فإنّ معدّل الالتزام بنظافة اليدين بين العاملين في المستشفيات ما زال متدنياً. لذلك فإنّ الاستراتيجيات الفعالة تعتبر مطلباً ملحاً وضرورياً داخل المستشفيات لرفع معدل الالتزام بنظافة اليدين بين العاملين في المستشفيات.

**الهدف:** تقييم فعالية برنامج تدخّل منظمة الصحة العالمية المتعدّد الوسائط في رفع معدل الالتزام بنظافة اليدين بين العاملين في المجال الصحي وموردي السلع الغذائية والامتثال لهذا الأمر.

**الطريقة:** تم استخدام تصميم شبه تجريبي كمّي طبّق في مستشفى الكارييتاس للأطفال. العينة المستهدفة كانت جميع الموظفين الذين هم على اتصال مباشر بالمريض. وقد تمّ جمع المعلومات من خلال استمارات نظافة اليدين ومنع العدوى قبل التدخل متعدد الأساليب ( لوحات ارشادية - محاضرات .. الخ) وخلالها، وبعده، وقد تمّ تحليل المعلومات من خلال الحزمة الإحصائية SPSS V.17

**النتائج:** عدد العينة المستهدف للدراسة كان 145 من العاملين في المجالين: الصحيّ ومزودي الطّعام في مستشفى الكارييتاس وكان معدّل الاستجابة للدراسة 96%، وكانت على النّحو التّالي ( % من العينة المستهدفة) الممرّضات والممرّضون 67% ، والأطباء 11%، وفنيو المختبر 8%، وفنيو الاشعة 3%، ومزودو الطّعام ( مطبخ الحليب) 11%. هذا وقد أخضعت العينة المذكورة أعلاه إلى برنامج تنقيفيّ وتعليميّ وتدريبيّ حول مفهوم نظافة اليدين وتعقيمهما. وقد أظهرت النتائج وجود ارتباط جيد وعلاقة إيجابية ( $\alpha \leq$ ) 0.5 بين برنامج الدراسة متعدّد الأساليب وإرشادات الالتزام بنظافة اليدين لدى العاملين في مستشفى



الكاريتاس. حيث أظهرت النتائج ارتفاعاً كبيراً وملحوظاً في الالتزام بنظافة اليدين والامتثال له من 72.62% إلى 95.72 % بعد فترة التدّخل والتي استمرت ثلاثة أشهر حيث طرأ تحسن واضح على التزام جميع الفئات المهنية وامتثالهم للأمر، وكانت النتائج على النحو التالي: النسبة الأعلى 99.3 % لدى العاملين في المختبر، والنسبة الأدنى 85 % لدى العاملين في قسم مطبخ الحليب. وأما بالرجوع إلى ( my five moments) كانت النتائج على النحو التالي: النسبة الأعلى 92% لدى العاملين في قسم الأشعة، النسبة الأدنى 75% لدى الأطباء. كان هنالك اختلافات في نسبة الالتزام في إرشادات نظافة اليدين وتعقيمهما قبل تطبيق البرنامج متعدد الأساليب في كلّ أقسام الدّراسة وبعده ( $P < 0.05$ ). وأيضاً كان هنالك اختلافات في نسبة الالتزام بنظافة اليدين وتعقيمهما بين ما بعد التعامل مع المريض على صعيد جميع العاملين في المستشفى وفي جميع أقسام المستشفى وما قبله، حيث أظهرت النتائج أنّ نسبة الالتزام بتغسيل اليدين كانت أعلى بعد التّعامل مع المريض بالمقارنة بنسبة الالتزام بتغسيل اليدين قبل التّعامل مع المريض.

**الخلاصة والتوصية:** إنّ نظافة اليدين والالتزام به يعتبر حجر الزّاوية في منع انتشار العدوى داخل المستشفى. حيث إنه طرأ تحسن إيجابي على نسبة الالتزام بنظافة اليدين لدى العاملين بعد خضوعهم لبرنامج تدّخل منظّمة الصحة العالمية المتعدد الوسائط من 72.62% إلى 95.72. وعليه فإنّ نتائج الدّراسة هذه لا بدّو أن تشكّل حافزاً وداعماً قوياً لصانعي القرار وراسمي السّياسات للعمل على تطبيق برنامج تدّخل منظّمة الصحة العالمية المتعدد الوسائط ودعمه لتحسين مستوى الالتزام بنظافة اليدين في المستشفيات الفلسطينية والامتثال له.

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